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The Missions of the Navy and The Methods
of Carrying Them Out

by

Admiral V. Platonov

New weapons quite naturally compel a review of the paths of development of the types of armed forces and the methods of using these types of armed forces in a war. At present, obsolete combat equipment and armament is being vigorously forced out by new types of weapons and military technology. Tube artillery on the sea, bomber aviation, and large surface vessels have irrevocably lost their former significance. However, all this does not provide any basis for reducing the missions of our Navy merely to the destruction of vessels carrying missile-nuclear weapons (raketno-yadernoye oruzhiye) at sea, as proposed by Colonel General Castilovich in his article (Spetsialnyy sbornik statey zhurnala "Voyennaya Mysl", First Edition, 1960).

If we proceed from the fact that a modern war will not be a blitzkrieg, but will be lengthy in nature, we unavoidably come to the conclusion that there will be a wider scale of combat operations by naval forces. It is necessary to assume that the known forms of combat at sea will undergo changes, and that new methods of naval operational art and tactics will be introduced, while accomplishing both the old and the completely new missions of the Navy.

The destruction of aircraft carrier attack large units (avianosnoye udarnoye soyedineniye) is one of the most important missions of the Navy. Since aircraft carriers are for the present still the main delivery vehicles of enemy missile-nuclear weapons at sea, naturally they must be sunk first. Unfortunately, the means and methods of accomplishing such a highly difficult mission are often oversimplified. It is reckoned that, having decided to put our bases out of operation or destroy our industrial centers, an enemy aircraft carrier attack large unit would sail out into the open sea, approach Soviet shores to the distance of the radius of its aviation, and launch its planes,

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which would deliver the attack. Meanwhile, our submarines, deployed in advance in the area of operation of the aircraft carriers, and aided by reconnaissance and attack aviation, would sally forth to the attack and, using massed actions, would sink the enemy vessels. The training exercise carried out by the Pacific Fleet in October 1959 was conceived and oversimplified just this artlessly and sketchily.

It should be assumed that even the most untrained fleet will not act in such a primitive and imprudent manner. Where it is permitted by the conditions of the theater, the enemy will use, in the first instance, aviation from his coastal airfields and land missile units for attacks on objectives of our seacoast. In the areas where aircraft carrier attack large units will operate, they will use for their concealment and protection suitable anchorages of bays and straits, equipped with naval bases. Such possibilities actually exist in all of our sea theaters. Furthermore, if the situation forces the enemy to sally forth into the open sea to deliver an attack, the aircraft carrier attack large unit will see to it that a thorough search is carried out and the area of its maneuvering is cleared of enemy submarines.

Consequently, an encounter and battle of our forces at sea with a freely maneuvering aircraft carrier attack large unit in sight of our seacoast must be considered unlikely, and the mastering of such a simple mission must be considered as not achieving training goals.

The matter is even more complicated in remote areas of the ocean, on the lines of communication of the enemy. There, aircraft carrier attack large units can act solely as protective forces for convoys or as antisubmarine (PLO) hunter-killer groups (poiskovo-udarnaya gruppa). They will persistently hunt our submarines and attack them first. The strikes of the submarines will have the character of counterattacks and will follow only after warding off the active operations by the forces and weapons of the enemy PLO, after breaking through or bypassing the immediate protection of the aircraft carriers. This means that no matter what formations and combat order the submarines adopt, all of them will be intermingled at the moment of delivering the strike on the main objective.

Thus, combat against aircraft carrier attack large units at sea is only part, albeit the most difficult part, of the mission of destroying the ocean communications lines of the enemy.

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Thus, the operational-strategic command-staff training exercise conducted by several of our fleets in the Atlantic in August 1960, in which submarines operated similarly against a freely maneuvering aircraft carrier attack large unit, can be justified, if only as a first endeavor at breaking out into the ocean.

The complexity of preparing and carrying out operations designed to destroy aircraft carrier attack large units urgently requires the correct selection of the main forces for accomplishing this mission. An over-all appraisal of the various qualities of all of the combat means of the Navy shows that only submarines, employed in coordination with aviation, can serve as such forces. And just when it seemed that this course of action had become potentially clear to everyone, Rear Admiral V. Bogolepov comes out in print with (Spetsialnyy sbornik statey zhurnala "Voyennaya Mysl", Third Edition, 1960), the unfounded assertion that the main force in combating aircraft carrier attack large units is aviation.

Without burrowing into the details to prove the unsoundness of this strange conclusion, we point out only that means of combat are usually chosen not on the basis of their monetary cost, as Rear Admiral V. Bogolepov does, but on the basis of their degree of reliability in accomplishing a mission assigned to the armed forces. It is self-evident that aviation supplied with missile weapons is a powerful means of carrying out combat operations at sea. However, it should be taken into account that before it can carry out combat missions it must fly to the Atlantic Ocean for a look at the enemy. While aviation is considerably more maneuverable than submarines, it is inferior to submarines in radius of operation, in concealment of deployment and approach to the enemy, in endurance or duration of staying in position, in capability for repeated attacks, in viability, in potential for self-defense and evasion of enemy attacks, and in ability to operate irrespective of weather conditions and the time of day. On the basis of exactly these qualities of firmly insuring reliable fulfillment of the basic missions of combat at sea, submarines are indeed in the category of the main forces of the Navy. Naval long-range aviation is the combat assistant to submarine forces. It protects their operations at sea and coordinates with them in strikes.

Rear Admiral V. Bogolepov predicts a great future for atomic aviation in operations at sea. One should not give oneself up to illusions. Even though it may be too soon to argue about what the atomic engine will do for the airplane, it is still possible to say

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now with certainty that such a plane will be shot down by the weapons of antiaircraft defense (PVO) just like all its piston-engine and jet predecessors. As for new speeds and unlimited radius of operation, it seems that these factors have been exhausted by pre-atomic piloted aviation and will be limited in the future not so much by technical improvements in aircraft engines as by the endurance of the human organism.

Speaking of the future of aircraft carrier attack large units, it should be noted that, in general, they have had their day. This is so as a consequence of the fact that the aircraft carrier has become too easy a target for missile weapons. Its loss creates a large gap in the combat formations of the navy. The aviation carried by an aircraft carrier is easily shot down by surface-to-air (zenitnaya) guided missiles, and is no longer capable of discovering submarines at sea so long as they do not appear on the surface. Aircraft carrier attack aviation is more and more being replaced by missiles, and hunter aircraft by anti-submarine vessels. Aircraft carriers are clearly being supplanted by missile-carrying submarines, PLO submarines, and corvettes having good means of search, antiaircraft missiles, depth charges, and antisubmarine missiles (protivolodochnaya raketa).

Combat against missile-carrying submarines. The unwieldy structure of combat formations of aircraft carrier attack forces, the great vulnerability of aircraft carriers, the impossibility of concealing their movement, and the unreliability of aerial attacks against coastal objectives, is forcing the navies of the NATO countries to shift the task of operations against the coasts from aircraft carriers to missile-carrying submarines.

The advantages of missile-carrying submarines over surface aircraft carriers is so obvious and overwhelming, and the rate of construction of submarines by our potential enemies so serious, that the danger of missile attacks from under the sea is becoming quite real. The threat of missile-carrying submarines is marked by the peculiarity that it concerns not only our naval bases, ports, and seacoast, but also industrial centers deep inside the country. Therefore, combat against enemy submarines and their missiles goes beyond the bounds of the missions and capabilities of the Navy and must be carried out by both the forces of the fleets and troops of the PVO of the Country.

Many people assume that with the start of a war it will be sufficient to deliver a strike by intercontinental (mezhkontinentalnaya) missiles upon the submarine bases and shipyards of the aggressor in

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order to put an end to his Polaris carriers. However, our enemies are assuredly considering such a possibility. They are making preparations to move their submarines out from under a nuclear strike, deploy them at sea beforehand, and then to repair and supply them at temporary basing points concealed in unequipped bays or located on surface or submarine tenders, and at mobile rear area stations mounted on automotive vehicles. Missile-carrying submarines are capable not only of delivering the first nuclear strike, but also of continuing the war until they are all destroyed.

A careful analysis of our existing methods of combating missile-carrying submarines shows that their means is not notable for its originality. In one case these methods proceed from the assumption that enemy missile carriers (raketonosets) will come into our closed seas and that then the tactics of destroying them will in no way differ from the long-known methods of combating the old submarines operating near the seacoast. Some comrades think that missile-carrying submarines will approach our coasts from the spacious open sea to a point within range of their Polaris missiles and open fire upon the continent. In this case, combating them will differ from the usual methods of protecting our communications lines only in the degree of remoteness of the operations from bases. Sometimes the combating of missile-carrying submarines is related to the missions of the

PLO of a protected area of a base, the methods of which have not changed from the time of World War II (Velikaya Otechestvennaya voyna).

Strictly speaking, we do not yet have finalized methods for combating missile-carrying submarines. Even the main forces for accomplishing this mission have not been defined. Rear Admiral V. Bogolepov, for example, in analyzing historical experience, tries to prove that, not only in the past, but also in the foreseeable future, the main force for combating submarines is aviation.

Combat against submarines really has its own history. In World War I, submarines possessed insignificant endurance, causing them to operate mainly near the seacoast and on the approaches to ports and bases, where the sea supply routes meet. At that time aviation had just been born; therefore, the only means of combating the submarine threat was the surface vessel. The enemy was detected with the naked eye and sunk by ramming, with artillery shells, and with depth charges. During World War II, in spite of a sharp increase in their endurance, submarines continued to travel on the surface, to surface for charging batteries, and to carry out attacks at periscope depth. In essence

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the submarine remained a semi-surface vessel as previously and was observed visually. This circumstance facilitated the hunting of submarines by aviation, which, possessing a large apparent horizon and high maneuverability, soon became the main PLO force, the gravedigger of submarines.

The modern atomic submarine is another matter. In general, it can stay below the surface of the water for the entire duration of an operation. Hidden in the ice of the Arctic, in the fiords of Norway, or among the islands of the Aegean Sea, atomic submarines will deliver missile fire on our territory. Possessing underwater speeds which are not inferior to the speeds of the fastest surface vessels, they are capable of escaping from the attacks by PLO weapons at great depths and of evading pursuit. Under these conditions one asks what results can be expected of hunter-killer antisubmarine groups composed of aviation and surface vessels? None. And helicopters, with their insignificant radii of operations and their inability to fly over the sea in poor visibility, at night, and in bad weather, will also be completely useless here.

Antisubmarine submarines armed with the most improved sonar (gidrolokatsionnaya) and hydroacoustic (gidroakusticheskaya) equipment can be the only real forces for combating missile-carrying submarines. Underwater sonar search, underwater patrolling, and underwater patrols and ambushes must become their tactical methods. Active combating of missile-carrying submarines and all maneuvering connected with hunting and destroying them must now be carried on deeply underwater instead of on the surface. There is no other way.

Unfortunately, our military press has not yet devoted much attention to working out methods of combating missile-carrying submarines. In those few articles in which these problems are treated, PLO submarines are assigned the limited mission of detecting the enemy in narrows and at the exits from his bases.

Combat against ocean shipping. Without touching upon the well-known questions of the importance and significance to the European countries and to the United States of ocean lines of communications, we will only point out that this shipping will not cease even after all the naval bases and commercial ports of the warring nations have been destroyed by missile-nuclear weapons, strikes. The landing of the Allies in Normandy in June 1944 has already shown in what short periods of time it is possible to create immense temporary port

installations from sunken ships. The new capabilities of industry and construction technology now make it possible in the course of one night to install towed and self-propelled pontoon wharves on an unequipped shore, to build artificial harbors, and to carry out roadstead loading of tankers and dry cargo vessels. Consequently, the destruction of ports can cause only a temporary delay of shipping and nothing more. The main burden of the operations for the destruction of shipping, particularly the destruction of convoys, must be transferred to the open ocean.

The content of the combat preparedness of the navies of the countries of the aggressive military blocs shows that in the waging of combat by our forces against ocean lines of communications, the first question that should be examined is that of the main strike and the primary objective of the attacks. If, previously, the main strike against convoys was directed against cargo transports and large surface vessels, such a course of action is now unacceptable. The combat formations of aircraft carrier strike forces have come to be formed in such a manner that it is impossible for either our submarines or aviation to approach the transports without a fight. Not many forces will succeed in circumventing the dense PLO screens and the circular lines of protection. Therefore, it becomes necessary to choose the aircraft carriers as the main objective in combat against enemy shipping. Transports must become the objective of attacks during the successful development of the operation for the destruction of convoys. Naturally, the new missile-nuclear weapons should be used in the main strike and old weapons can be used to exploit the success of the strike.

One cannot assume that the existing system of convoys will remain unchanged. As soon as this system ceases to satisfy the requirements of security and reliability for shipping, it will be replaced by a new system. What form the protection of transports on the ocean may take will depend on many factors, but to some extent World War II has already provided a new structure of convoys. In the Northern Theater, German transports with little advance protection moved along the Norwegian coast, covering one side by staying close to the shore and protecting the other side with an antisubmarine mine barrier. It must be said that such an unexpected measure introduced great difficulties into the operations of our submariners. It should be assumed that the complexity of combating atomic submarines with maneuverable forces will lead to the wide use against them of fixed means of combat facilities (pozitsionnoye sredstvo borby) and of jamming of their observation and control [facilities].

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One may often hear arguments that the movements of personnel and urgently needed cargoes will be effected by aircraft, naval vessels, and even submarines. All this has had its place in the past, and possibly may have its place in the future, but such shipments can only be incidental in nature. They will neither replace nor eliminate the need for large-scale use of maritime cargo transports.

An important and still unresolved problem in combat operations on the lines of communication is the question of the attacking submarines' obtaining accurate data on the movements of the target. The gap between the means of target indication, paralyzed to a virtual standstill, and the technology of submarine construction, which has moved far forward, existed even earlier and is constantly increasing. The submarine long ago became capable of firing from underwater, but in order to obtain firing data it must come to the surface as before or must approach submerged to within risky distances of the enemy. Such use of new large atomic submarines is intolerable. Without waiting for the time when accurate data on the location of the enemy may be obtained by means of artificial earth satellites, our scientific research establishments must take steps at once to eliminate this lag which was permitted to develop, and achieve an increase in the distance of underwater observation (nablyudeniye) and in the accuracy of underwater direction finding (pelengovaniye).

In delivering strikes against enemy convoys, submarines can use missiles and torpedoes. In attacks against aircraft carriers, one must obviously give preference to guided missiles, since they are superior to torpedoes in both range and speed. Even though a missile salvo from an underwater launching reveals the missile-carrying submarine, whereas a bearing cannot be taken on the path of a torpedo, it is necessary none the less to disregard that advantage of the old, slow-moving weapon.

There is no need to expend missiles against transports, since one or two ordinary torpedoes are sufficient to sink a merchant vessel.

An analysis of the conditions of modern naval combat shows that it will apparently be difficult to find a use for torpedoes with atomic warheads, including even long-range torpedoes.

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As can be seen, the existing missiles and torpedoes have shortcomings in their use against vessels by submarines. Therefore, it is necessary to make greater efforts in perfecting a submarine missile (podvodnaya raketa) from which there is every reason to expect hopeful results.

Combined operations. The predominately continental character of our country has always determined the relatively unimportant place which combined operations of the Navy with other types of armed forces have previously occupied in the wars of the Soviet Union. At the present time, the situation in this respect is changing.

We shall dwell briefly on the problems of repelling and of debarking strategic landing forces and on the participation of submarines in delivering strikes against enemy coastal objectives.

The debarking of large landing forces for the purpose of opening a new combat front or of transferring combat operations to other continents has been practiced sufficiently often in past wars. As a rule, debarking operations have succeeded, since the initiative in the selection of the time, place, and forces belonged to the attackers. However, the success of the operations of the landing forces on shore depended on the quality of preparedness of the forces, the weapons of the anti-landing defense (protivodesantnaya oborona), and the ability of the defending side to bring reserves to the area of the initial attack and to mobilize internal resources. The latter have always existed in a country well prepared for war. Thus, the well-known, successfully initiated Dardanelles landing operation of the British and French in 1915 was not exploited on shore, and the brilliantly executed debarking at Normandy in 1944 nearly ended in catastrophe when the Germans broke through the front of the Allies with their tank armies in the Ardennes in December 1944, and that happened when fascist Germany was barely able to stand on its feet, only a few months before its downfall! Considering the above, one must regard the debarking of significant forces by our potential enemies on the territory of the Soviet Union as unlikely at the present time.

The possibility and necessity of the debarking of strategic landing forces by our Navy evolves from the liberating mission which the Soviet armed forces are called upon to serve. It is naive to expect that the third world war will be limited to the European continent, that the liberation of Europe alone will lead to the downfall of the entire imperialist camp and that it will only be

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necessary to drop some hydrogen bombs on it with no need to land troops on the shores of island or transoceanic countries. On the basis of the experience of World War II, it is known that it is only possible to deal the final blow to an aggressor in his own den. Inasmuch as aggression in a modern war is likely to be from beyond the sea or ocean, it is only possible to reach its nest for the final blow by means of a naval landing operation. It is natural to assume that such a landing must be composed of several armies, that thousands of ships and naval vessels will be needed for its landing, supply, and reinforcement, and that it will be necessary to precede the operation itself by successful operations to achieve air and sea superiority. But it is certainly necessary to prepare for such an operation, the more so because recently we have completely, and without reason, lost interest in the debarking of landing forces.

Colonel General A. Gastilovich writes in his article that it is now scarcely feasible to conceive of a large naval landing force, since it is possible to destroy it with missile-nuclear weapons while they are still at their bases and at sea. Of course, if we expose our forces to the enemy, he will destroy not only the landing force but everything else as well. To prevent this from happening, the forces carry out measures of protection, defense, and forestalling the enemy in his operations. As in all other naval operations, modern methods of debarking landing forces take into consideration the possible employment of missile-nuclear weapons by the enemy.

Not very long ago our submarines, armed with ballistic (ballisticheskaya) missiles, participated in strikes by missile troops of strategic designation against deep enemy objectives. Now, with the appearance in our armament of intercontinental ballistic missiles which can reach any point on earth, missile submarines have been freed from these missions. It seems to us that such a step is premature.

It is known that our potential enemies are working on the interception of ballistic missiles. At the beginning of last year, the interception of an Honest John missile by a Hawk missile was demonstrated in the United States; now they are placing some reliance on the Nike-Zeus and Bloodhound missiles. One must believe that sooner or later everyone will learn to intercept ballistic missiles. Then, missiles launched from submarines will have advantages over intercontinental missiles because of their shorter range and lower trajectory. It will be more difficult to intercept submarine missiles,

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and their floating launching position (plavayushchiy start) provides more favorable conditions than do fixed land launching installations (ustanovka).

The control of naval forces is now going through a crisis. This was particularly noticeable during the above-mentioned exercise in the Atlantic. The forces of two fleets participated in the exercise. The commanders took turns commanding them, not unlike the consuls of the early period of the Roman Republic. As the fleets move from north to south, the Commander of the Northern Fleet commands them as far as the 50th parallel. At this boundary he transfers the forces to his Baltic colleague, and then observes what is done with his vessels by the other commander. When the fleets move in the opposite direction, the change of commanders is repeated. Is it necessary to prove that this compulsory method is a half measure and that this is no way to command fleets? If, engaged in battle on the boundary of 50° North and, under the impact of a new situation, the forces changed the plans of operation of the large units as mentioned earlier, what confusion would ensue. Various vessels of the same large unit would report on their operations to various addresses and receive contradictory decisions from two staffs. Under these conditions it is also not quite clear which of the two commanders should bear the responsibility for the outcome of the entire operation.

The transfer of forces during the course of an operation, and at a great distance from shore at that, is intolerable. Zonal command is a remnant, a vestige of habit, left over from the territorial nature of the missions of the fleets in the recent past. Here is an attempt to combine new missions and new methods of combat operations, brought to life by new weapons, with the old forms of organization of the control organs of the forces. Earlier, when the missions of our fleets were tied to a limited territory and did not go outside the bounds of their naval theater, commanders of fleets were able to cope with the control of both the active operations at sea and the operations for the defense of bases and the seacoast. They also directed all of the types of combat and materiel-technical support. Now, when vessels of the fleet go out into the ocean, abandoning their bases for a long time, the commander is unable to control both without detriment, even if he is an absolute genius. The commander inevitable faces a gloomy prospect; he must either tear himself away from his theater and bury himself in the control of forces in the ocean far beyond the bounds of his theater, or transfer his ocean operations to a neighbor and command the defense of the theater himself.

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The only possible way out of the complicated situation which has been created is through scrapping old forms of organization. In fact, such a scrapping has already been noted in places.

Each fleet assigned to operate in an ocean must have two independent commanders, subordinate to a center. One of these would be strictly the commander of the fleet, composed of submarines and long-range aviation. The other would be the commander of the naval district (morskoy voyennyi okrug), composed of all remaining forces. He would be responsible for the defense of the theater and all types of support of the operations of the ocean fleet.

Of course, the commander of the fleet must be a submariner, and his submarine command must bear the character of a field staff, capable of commanding forces at sea from a command post (KP) located wherever it is advisable according to the situation. In number of personnel, this staff would be half the size of the present staff of the submarine forces.

The proposed reform would not only remove our commanders of fleets from their dual positions but it would also increase the role of the commanders of submarine forces, who in point of fact only formally bear such a title at the present time, while in reality they play a passive role in the carrying out of operations and are removed from the command of their operational groupings (operativnoye obedineniye) at sea. In an alert, the commander of submarine forces usually abandons his command post and the forces subordinate to him and transfers to the fleet command post (FKP) of the commander of the fleet. There, he commands nothing. His lot is to be an assistant and help prepare correct decisions for the staff of the fleet.

It would be appropriate to note here that even the Main Naval Staff, on which there is not as yet one submariner admiral, is not free from that ailment.

The separation of the missions of the fleet into two groups, and the strict delineation of the functions of the two independent commanders and their staffs would finally unravel the knot of contradictions in the command of the forces, and introduce clarity into its organization. It goes without saying that in this case the need for the maintenance of a command of submarine forces disappears. The fleet commander alone, with his staff, would prepare and carry out operations at sea from start to finish.

When the unified efforts of several fleets are needed, a unified command should be appointed.

Differing opinions give rise to several methods of command for submarines in the ocean. Debatable are the questions of the necessity of massing forces, the superiority of group operations over individual operations, the advantages of forcing submarine barriers with large units over the successive overcoming of the barriers without adhering to strict formations, and the delivering of strikes by large units in correct lines or by flexible waves (lava) free from formations.

When submarines did not have nuclear weapons, it was necessary to hit a battleship or aircraft carrier with eight to ten torpedoes to sink it. In order to achieve this, it was necessary to mass or group forces not only for delivering strikes against a large unit but even for destroying one vessel. The new weapons are capable of sinking a vessel of any class and displacement with one shot, and therefore it is no longer necessary to unite the efforts of several submarines to accomplish such a mission. However, this by no means excludes the massing of forces.

In spite of the opinion of Rear Admiral K. Stalbo (Morskoy Sbornik, No. 1, 1961), when delivering a strike, for example, against an aircraft carrier large unit, it is necessary to mass forces in order to attack it from various directions and disperse the attention of the defense forces of large vessels and their immediate protection. Massing is also necessary to insure uninterrupted (during short periods of time) delivery of strikes, from which the enemy will not succeed in rallying, and his damage and confusion from the first strike can be exploited by followup strikes. The firing of missile-nuclear weapons against vessels still must always be aimed.

Obviously, even when massing is necessary, atomic submarines must not be bound by line formations, correct close order, and geometrically measured combat arrays. All that is fine for games on maps. At sea, though, as experience shows, such formations can be maintained with difficulty only until the encounter with the enemy, after which the commander of the group (gruppa) or large unit loses control, and the complete independence of the submarine commanders ensues.

Even with the existence of ideal underwater communications, there is no need for atomic submarines to maintain squadron formations, no need for observance of the feeling of fellowship.

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New underwater speeds of submarines, and the range and accuracy of missile weapons, permit modern submarines to display more independence, initiative, and freedom of maneuver than before. Such ideal conditions, as in the past, such range (poligonnyy) support, as earlier, are not required now for successful attacks by them. The basis of the organization of atomic submarines must be waves (lava) or packs (stay), delivering massed strikes against a detected enemy large unit at an appointed time or a designated place.

The gathering of submarines in groups or large units during the stage of deployment, and outside of a battle or operation in general, does not give them any advantage in self-defense and only increases non-combat losses. Therefore, it cannot be justified.

Paths of development of forces. If mistakes in the determination of the main danger and most important missions of the Navy and miscalculations in the selection of the direction of the main strike and the main forces were not reflected in the determination of the paths of development of the Navy, then theoretical arguments of these matters would not go beyond the framework of academic discussions. However, basic mistakes in the orientation of the construction of vessels have already been permitted once in the Navy; so there is cause for sailors to argue, and they should be particularly thoughtful in approaching the selection of the paths of development of forces.

New technology and new weapons deservedly raise atomic submarines to the level of the main forces. With equal success, these submarines are capable of combating the main enemy nuclear weapons delivery vehicles (nositel) - the aircraft carrier attack large units - and of operating against the ocean communications lines and against objectives on the enemy coast. Therefore, it is understandable that primary attention has now been given to the construction of exactly this type of vessel. Considering that the existing danger from enemy missile-carrying submarines is no less serious than from aircraft carriers, the bearers of nuclear weapons, it seems to us that the same degree of attention should also be given to the construction of PLO submarines. However, that is not how matters stand here. Judging by information in the naval press (Sbornik statey zhurnala "Morskoy Sbornik", Special Issue, 1960, page 4), the construction of this only real means for combating atomic submarines carrying Polaris missiles is placed in the same rank with the construction of PVO vessels, landing vessels, and minesweepers.

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Experience shows that in the construction of forces it is detrimental to be carried away by vessels of narrowly assigned purpose, such as, for example, submarine chasers or PVO vessels. The combining of a number of missions in one vessel noticeably reduces expenditures for construction. Therefore, it is necessary to strive for good designs (proyekt) of a universal submarine capable of accomplishing both attack missions and antisubmarine defense missions, a corvette with equally powerful PVO and PLO weapons.

The benefits that the combining of missions promises may be judged by the appearance in our armament of missiles suitable both for attacks against a coast and for firing against vessels. In the place of two designs of attack submarines, it is now possible to limit oneself to one.

The paths of development of the Navy and the degree of participation of its forces in a modern war will be determined not only by the decisive role of missile troops and the continental nature of the countries of the socialist camp, but also by the geographic position of the aggressor countries. Studying the composition and behavior of the members of the NATO military bloc, it is not hard to see that they are preparing aggression not only in Europe but also outside its borders.

In case of defeat, our enemies will evacuate their troops across the ocean, and, as was already pointed out above, the landing of our armies on other continents from the sea will be indispensable. It would seem that such a circumstance should have given rise long ago to the intensive construction of landing vessels. However, this did not occur, and in point of fact there are now no landing forces in the Navy.

The construction of landing equipment is facilitated by the fact that in peacetime landing vessels can be operated with success by all civil maritime and river departments, which can order the construction of these vessels in the quantities needed for defense. It is sufficient for the fleets to maintain one to two divisions (diviziya) for combat training.

It should be observed that the fleets prematurely denied themselves the services of the naval infantry, whose training for landing was undeservedly cast aside. The naval infantry were always the bearers of the heritage of naval landing operations, the arm of forces which was well trained in the art of those most crucial and dangerous

first assaults upon the shore. Even now, naval infantry has not yet lost its importance.

The experience of the work of naval organs of shipbuilding and armament shows that their predominately engineering management is weakened by the lack of managerial personnel with an operational background, knowing the nature of war. In the final analysis, the foundation of shipbuilding and armament lies, not in technology, but in tactics and operational skill. Therefore, to present to industry the correct and rigid requirements called for by modern war, it is necessary to have within the management of the organs of shipbuilding and armament, admirals who have personally experienced war in the past and understand well what is required for a war in the future.